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Use of antihypertensive drugs at Capitán Roberto Fleites Polyclinic

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Acronyms
HT: hypertension
ACE: angiotensin converting enzyme
CCBs: calcium channel blockers

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ABSTRACT

Introduction and Objective: The rational use of medicines should be based on the scientific information available about its efficacy, safety, ease of administration and cost. The objective of this study was to characterize the behavior of the use of antihypertensive drugs.

Method: A research on drug use, indication-prescription type, was conducted in ten family doctor offices in the health area belonging to the Capitán Roberto Fleites polyclinic in the period between July and December 2011. The sample consisted of 431 patients with hypertension, who received 680 prescriptions of antihypertensive drugs under controlled medication certificates. The variables analyzed were age, sex, pharmacological groups, antihypertensive drugs, therapeutic strategy and its classification.

Results: Female gender (54.29%) and patients over 65 years (46.17%) were the largest users of antihypertensive drugs, the most commonly used drug groups were inhibitors of angiotensin converting enzyme (68.68 %) and diuretics (64.03%), and as specific drugs, captopril (26.47%) and hydrochlorothiazide (22.35%). Combined treatment of hypertension (63.11%) was predominant and prescription errors were mainly found in the pattern of drug administration.

Conclusions: The female geriatric population was the greatest user of antihypertensive drugs. Combination therapy with two or more drugs was the most frequent and inhibitors of angiotensin converting enzyme and diuretics, the most widely used. Prescription errors were more frequent in the pattern of drug administration.

Key words: Antihypertensive drugs, Hypertension, Medical prescription

Comportamiento del uso de hipotensores en el Policlínico "Capitán Roberto Fleites"

RESUMEN

Introducción y Objetivo: El uso racional de los medicamentos debe tomar como base la información científica disponible acerca de su eficacia, seguridad, comodidad de administración y costo. El objetivo de este estudio fue caracterizar el comportamiento del uso de fármacos hipotensores.

Método: Se realizó una investigación de utilización de medicamentos, de tipo indicación-prescripción, en diez consultorios médicos de la familia del área de salud perte-

neciente al policlínico "Capitán Roberto Fleites", en el período entre julio y diciembre de 2011. La muestra estuvo constituida por 431 pacientes hipertensos, a los que se les hicieron 680 prescripciones de fármacos hipotensores controlados por certificados de medicamentos. Las variables analizadas fueron: edad, sexo, grupos farmacológicos, fármacos hipotensores, estrategia terapéutica y su clasificación.

Resultados: El sexo femenino (54,29 %) y los pacientes mayores de 65 años (46,17 %) fueron los mayores consumidores de fármacos antihipertensivos, los grupos fármacológicos más utilizados fueron los inhibidores de la enzima conversora de angiotensina (68,68 %) y los diuréticos (64,03 %); y como fármacos específicos, el captopril (26,47 %) y la hidroclorotiazida (22,35 %). Predominó el tratamiento combinado de la hipertensión arterial (63,11 %) y los errores de prescripción encontrados fueron principalmente en la pauta de administración de los medicamentos.

Conclusiones: La población geriátrica del sexo femenino fue la mayor consumidora de fármacos antihipertensivos. El tratamiento combinado con dos o más fármacos fue lo más frecuente y los inhibidores de la enzima conversora de angiotensina y los diuréticos, los más utilizados. Los errores de prescripción más frecuentes fueron en la pauta de administración de los medicamentos.

Palabras clave: Fármacos hipotensores, hipertensión arterial, prescripción médica

INTRODUCTION

The rational use of medicines should be based on the scientific information available about its efficacy, safety, ease of administration and cost. Irrational or inappropriate prescribing of drugs is a phenomenon that occurs frequently, and our country is no exception to this practice.

The broad therapeutic arsenal currently available, concerns about the costs of health care and the growing demand for clinical-epidemiological information on medications, have generated great interest in knowing its use, which has resulted in an increased number of studies on drug use[1].

Antihypertensive drugs are not an exception to this phenomenon, so that this group is one of the most studied. Treatment of hypertension (HT) is varied and expensive, and is affected by frequent prescription errors that do not achieve the required effect on the patient and increase costs[2,3].

Hypertension is the most common condition that affects health all over the world; constitutes a disease in itself, as well as a major risk factor for the development of other conditions[4,5]. In 2000 the number of people affected by hypertension in the world was about 691 million, its prevalence in most countries is between 15 and 30%, and after 50 years of age almost 50% of the population suffers from it[6,7].

At present there are no studies of antihypertensive drug use in the population treated at the family medical offices belonging to Capitán Roberto Fleites Polyclinic. This research is conducted because hypertension is one of the major health problems, and the need for awareness in medical staff with regard to good practices for medical prescription.

METHOD

An observational, descriptive, cross-sectional, drug use study of the indication- prescription type was performed during the second half of 2011, in 10 family doctor offices belonging to the Capitán Roberto Fleites university polyclinic.

Study population

The population consisted of 434 patients with hypertension from the family doctor offices 19-17, 19-18, 19-19, 19-20, 19-21,19-22, 19-23, 19 - 24, 19-25 and 19-26. Three pediatric patients were excluded, so a total of 431 hypertensive patients of the health areas mentioned were evaluated.

Inclusion criteria

Diagnosis of essential hypertension, with pharmacological treatment in adult patients (≥ 18 years).

Variables

Age, sex, pharmacological groups used, antihypertensive drugs, therapeutic strategy and classification of

this strategy (monotherapy or combined).

Data

Data were obtained from certificates of patients' medications, which were included in a data collection document by the authors of the study. The results were stored in SPSS for Windows. For the successful implementation of information processing, descriptive statistics techniques such as the percentage calculation and implementation of frequency distributions were used.

Ethical considerations

This research did not require direct contact with the patient, but it was approved by the Ethics Committee of the governing institution. The data obtained were used only to meet the goals set and the names of the patients or the doctors who issued the medication certificates are not mentioned

RESULTS

Table 1 shows the distribution of patients by age group and sex. It is observed that female gender is the most affected, accounting for 54.29% of the cases. This table also reflects the increased prevalence of hypertension as age increases, for 46.17% of patients are over 65 years.

The distribution of the most used pharmacological groups in the treatment of hypertension is shown in Table 2, which shows that 68.68% of patients use some angiotensin converting enzyme (ACE) inhibitor, followed closely by diuretics, used by 64.03% of patients. In order of frequency they are followed by β-blockers (22.04 %), and calcium channel blockers (CCBs) were used for only 3.02% of patients.

Captopril occupies the top place in the most used drugs by the study population (Table 3), as it is used by 180 patients and constitutes 26.47% of total prescriptions. Hydrochlorothiazide (22.35%) and enalapril (17.06%) followed in order of frequency, and chlorthalidone (15%) and atenolol (12.79%) were also much prescribed. CCBs were the least prescribed.

Table 4 shows the type of treatment employed, which was classified by use of monotherapy or combination therapy. It can be noted that 272 patients use a combined regimen of antihypertensive drugs, which represents 63.11%. The most common combinations were: ACE inhibitors + diuretic, followed by β-blocker + diuretic and the association ACE inhibitors and β-blocker. For patients treated with monotherapy the diuretics, ACE inhibitors and β-blockers were the most commonly used in that order of frequency.

Regarding the most frequent errors in the prescription process (Table 5) it can be observed that 11.32% of monotherapies were improperly used and the most frequent cause was the prescription of β-blockers. Combination therapy was the best used, as only 3.31% of error was detected; however, in 70 prescriptions, (10.29%) errors related to the frequency of drug administration were detected.

DISCUSSION

The study population presents, as usual in most ana-

Table 1. Distribution of hypertensive patients, by sex and age groups.

Age groups	Men		Women		Total	
	Nº	%	Nº	%	Nº	%
18-45	30	6,96	34	7,89	64	14,85
46-65	68	15,78	100	23,20	168	38,98
>65	99	22,97	100	23,20	199	46,17
Total	197	45,71	234	54,29	431	100

Table 2. Most used pharmacological groups in hypertensive patients.

Pharmacological Groups	Men (n=197)		Women (n=234)		Total (n=431)	
	Nº	%	Nº	%	Nº	%
β-blockers	37	18,78	58	24,77	95	22,04
CCBs	6	3,05	7	2,99	13	3,02
ACE inhibitors	136	69,03	160	68,38	296	68,68
Diuretics	122	61,93	154	65,81	276	64,03

lysis conducted, a high prevalence of hypertension[4-7]. Comparing our findings we can see that these are consistent with clinical and epidemiological studies conducted in Cuba. One of them, conducted in the province of Pinar del Rio, reported more patients with hypertension in females (61.96%), with the highest prevalence from 60 years old (51.34%).

Our results are also similar to those obtained by other authors[9,10], where an increased diagnosis of hypertension with advancing age and female involvement is mentioned, and having a longer life expectancy in most populations they are the ones that contribute with more hypertensive patients.

The prevalence of this disease increases with age, to the point that more than half of those between 60 and 69 years, and about three-quarters of those over 70 are affected[10,11].

Ibarra *et al.*[11] in their study conducted in Spain also found that ACE inhibitors was the most used pharmacological group, however diuretics did not occupy the important place they achieved in our study, and were displaced by β-blockers and the CCBs. The CARDIOTEN[12] study, also conducted in Spain, showed much use of CCBs in contrast to the low use in our population, while ACE inhibitors, despite being widely prescribed, did not reach the levels of use seen in our population.

The low use of CCBs in our study is attributed to the limited availability, at that time in our country, of the drugs from this group, as their quality and important role in the treatment of hypertension are recognized.

ACE inhibitors, diuretics and β-blockers are held in high esteem by most experts, and are considered drugs of choice in hypertension[13-17]. This is due to fewer adverse reactions that occur in relation to other drugs and to the beneficial effects they have in other conditions such as ischemic heart disease and heart failure. It is positive then that our study has revealed these three drug groups as the most commonly used.

Today, diuretics, ACE inhibitors and β-blockers are considered as drugs of choice in the treatment of hypertension[13]. Our study provides data that match this perfectly, as the five most prescribed drugs belong precisely to these groups and are prescribed in one or another way in over 95% of the study population, however it does not behave like this in all health areas, as in a study in Santiago de Cuba, Gross et al.[14] described a low use of drugs such as hydrochlorothiazide and captopril in the study popula-

Table 3. Most widely used antihypertensive drugs in hypertensive patients, based on total prescriptions made.

Drugs prescribed	Nº	%
Captopril	180	26,47
Hydrochlorothiazide	152	22,35
Enalapril	116	17,06
Chlorthalidone	102	15
Atenolol	87	12,79
Spironolactone	22	3,23
Propranolol	8	1,18
Verapamil	5	0,74
Nifedipine	4	0,59
Amlodipine	4	0,59
Total prescriptions	680	100

Table 4. Distribution of patients according to the therapeutic strategy classification.

Estrategia terapéutica	Nº	%
Monotherapy	159	36,89
Combined treatment	272	63,11
Total	431	100

Table 5. Distribution of antihypertensive prescription, according to errors made.

Prescription errors	Adequate		Not adequate	
	Nº	%	Nº	%
Monotherapy	141	88,68	18	11,32
Combined treatment	263	96,69	9	3,31
Frequency of administration	610	89,71	70	10,29

tion.

According to Morón[15], once it has been decided to initiate drug therapy, the most appropriate medication is selected. It should be initiated with diuretics that are the first-line drugs, primarily thiazides and β-blockers (atenolol), which have the lowest cost and are highly effective. If there are contraindications for use or related diseases other drugs can be used; in addition side effects and contraindications of drugs for individual patients have an influence in drug selection. For example, β-blockers are useful for the treatment of all clinical forms of hypertension, but its use as monotherapy is indicated only in mild cases, in which other drugs that produce fewer adverse reactions are more effective. However, the combination of these with other antihypertensive agents is highly effective in the control of moderate to severe hypertension. In this regard, the combination with a thiazide diuretic is recommended, and the effect can be even greater if combined with another vasodilator[16].

The most common errors were single-dose administration of ACE inhibitors in different types, β-blockers or CCBs which were not calcium deposits, and the combination of ACE inhibitors with potassium-sparing diuretics, when it is known that these drugs increase, occasionally dangerously, serum levels of this ion[17].

CONCLUSIONS

The female geriatric population was the greatest user of antihypertensive medications. Combination therapy with two or more drugs was the most common, and angiotensin converting enzyme inhibitors and diuretics, the most widely used. The more frequent prescription errors were in the pattern of drug administration.

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